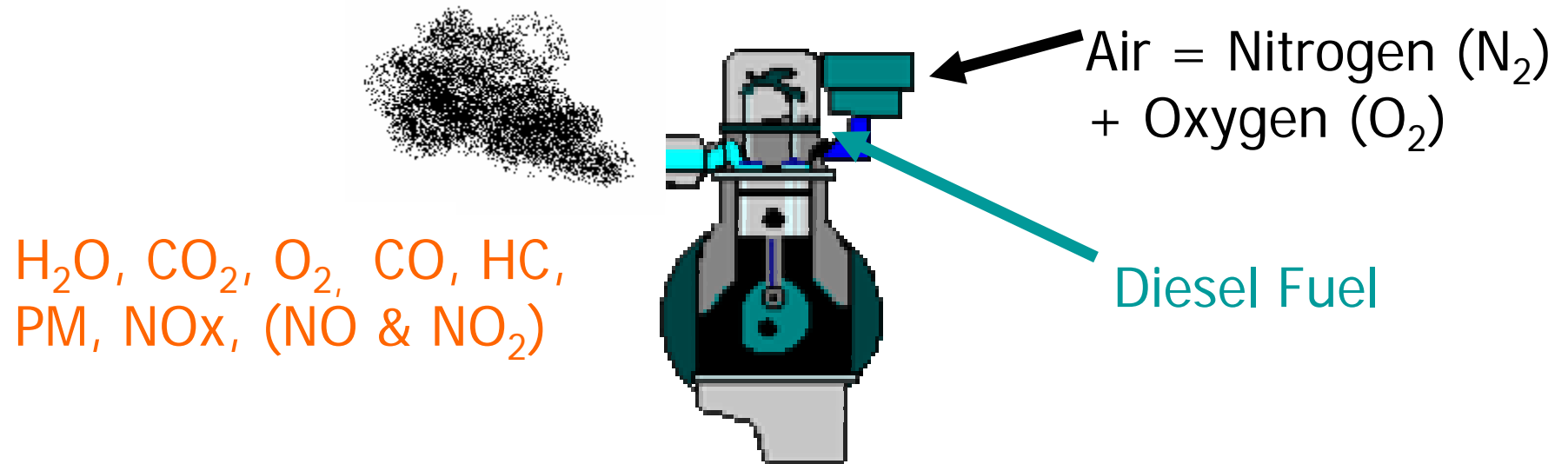




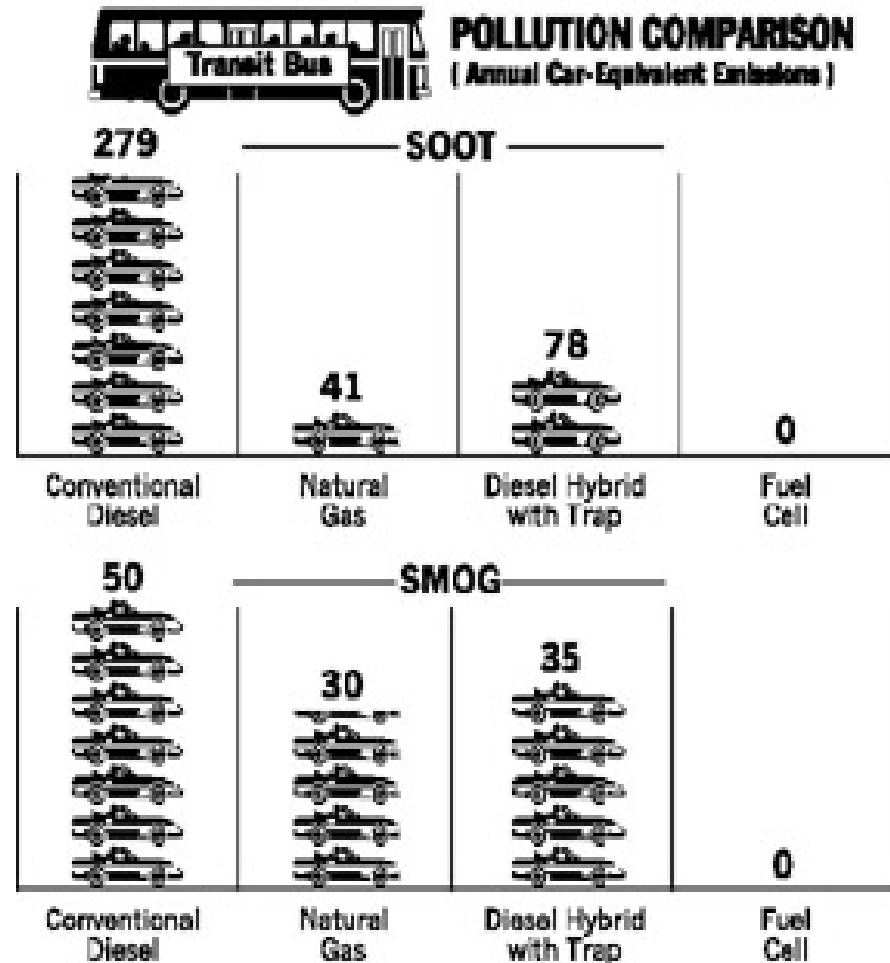
WASHINGTON STATE
DEPARTMENT OF
ECOLOGY



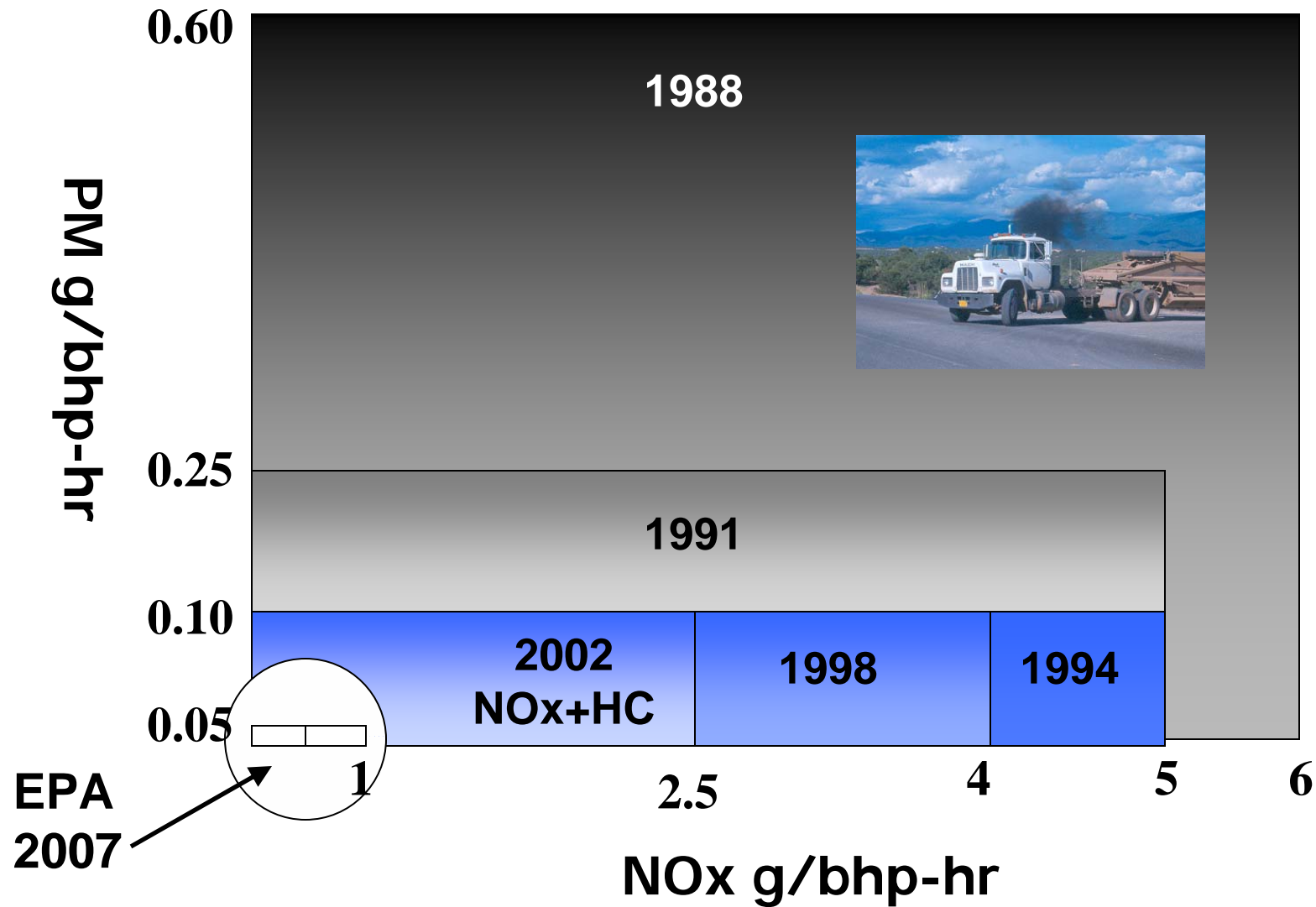
Diesel Engines & Emissions



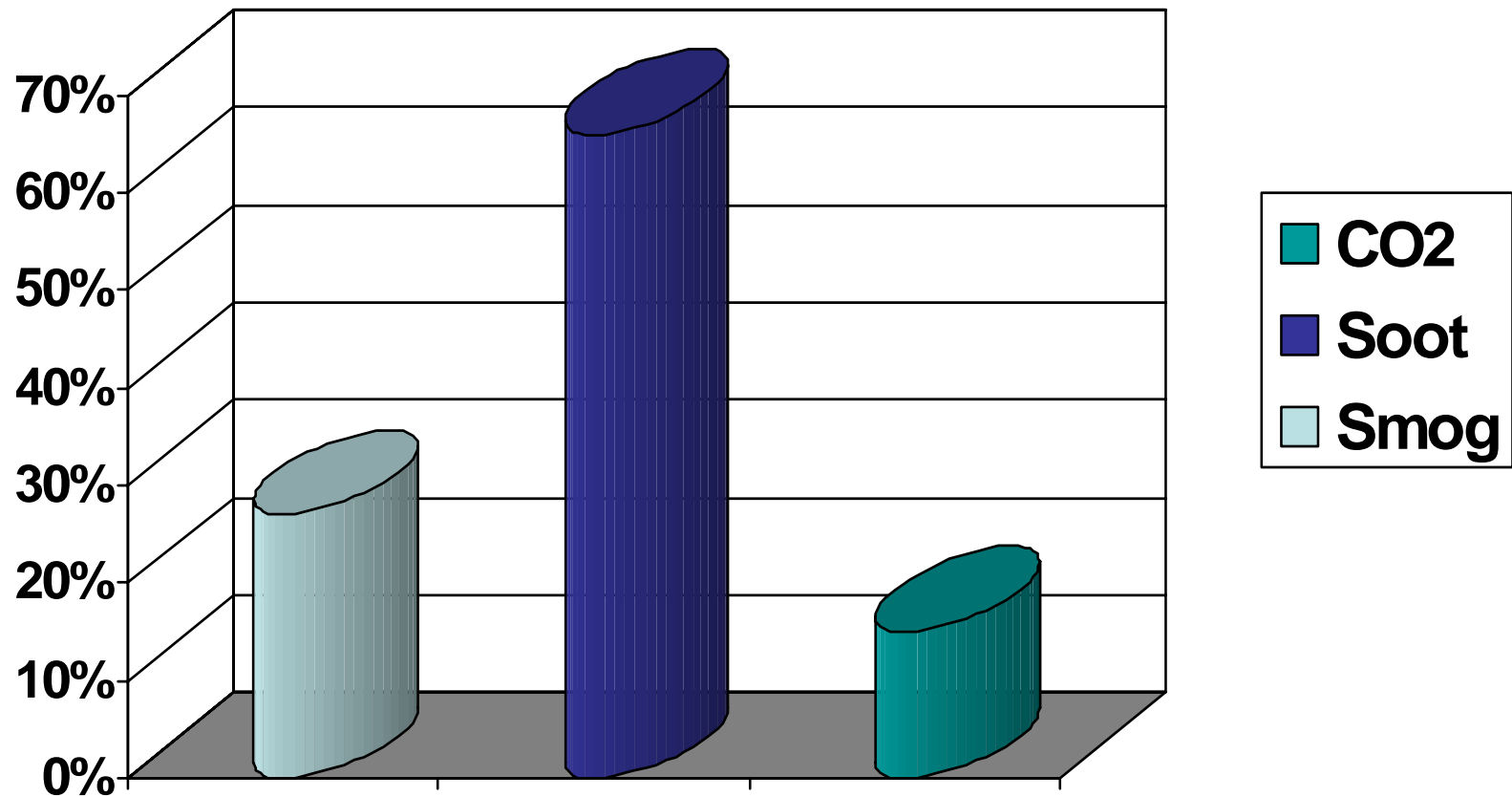
This is the number of cars that it would take to equal one dump truck



U.S. Air Pollution Limits



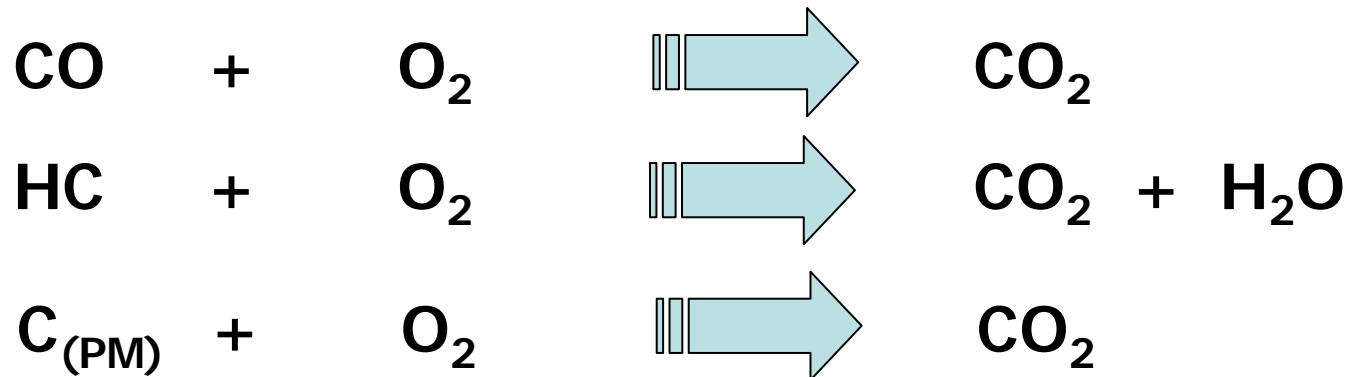
Pollution from Diesel Exhaust



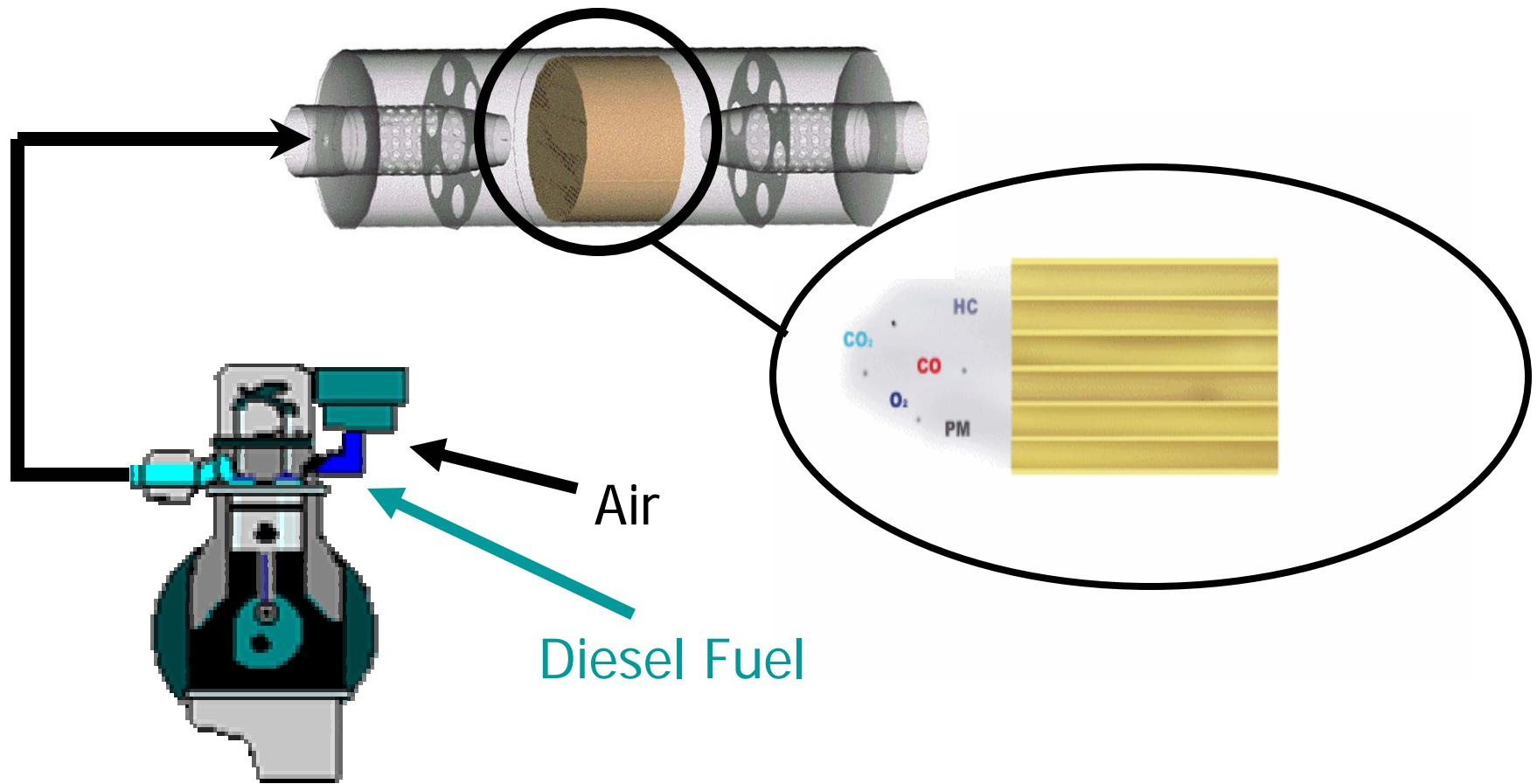
How, exactly, does a catalyst reduce emissions?

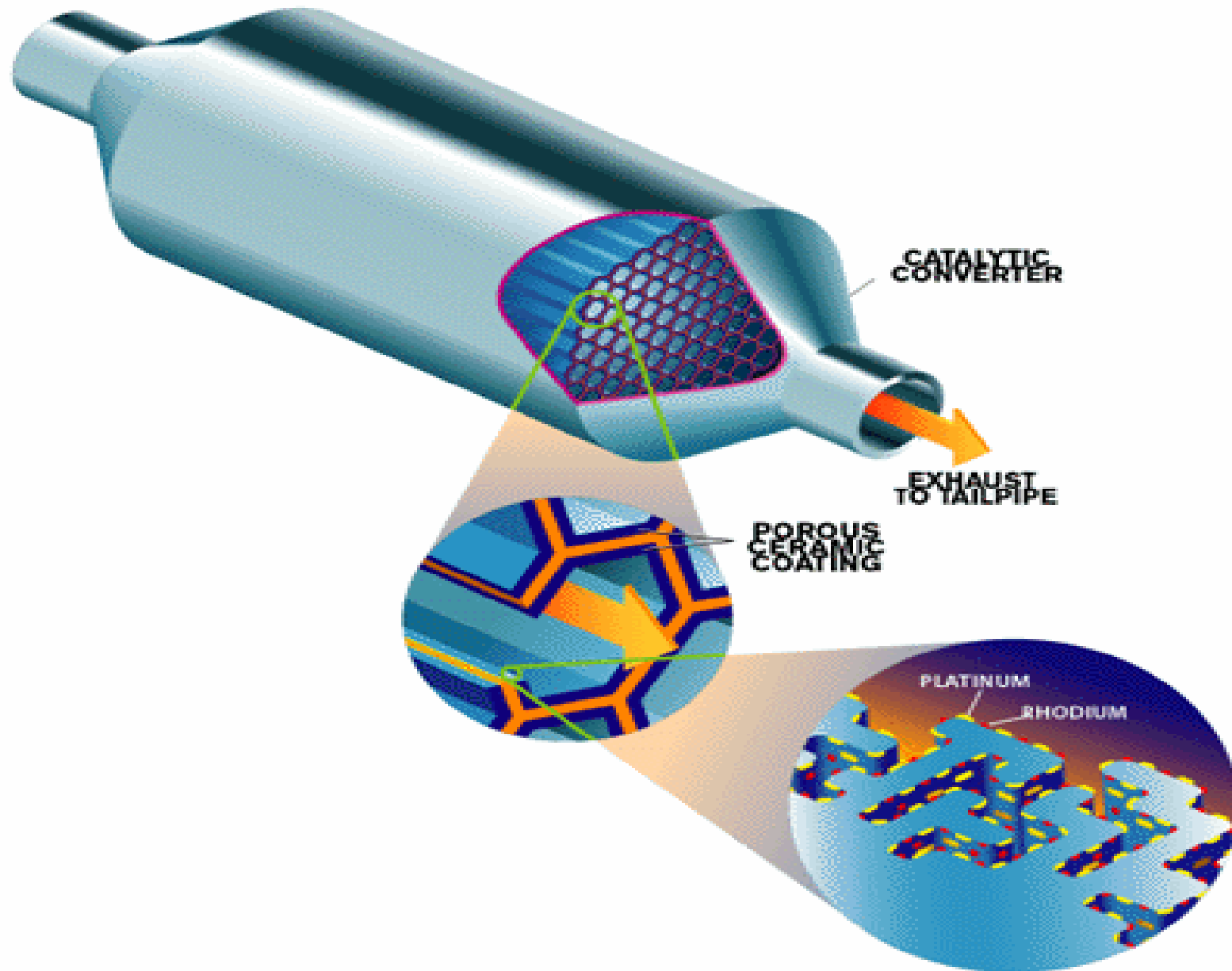
Reactions which occur spontaneously at a given temperature

Oxidation Reaction in Diesel

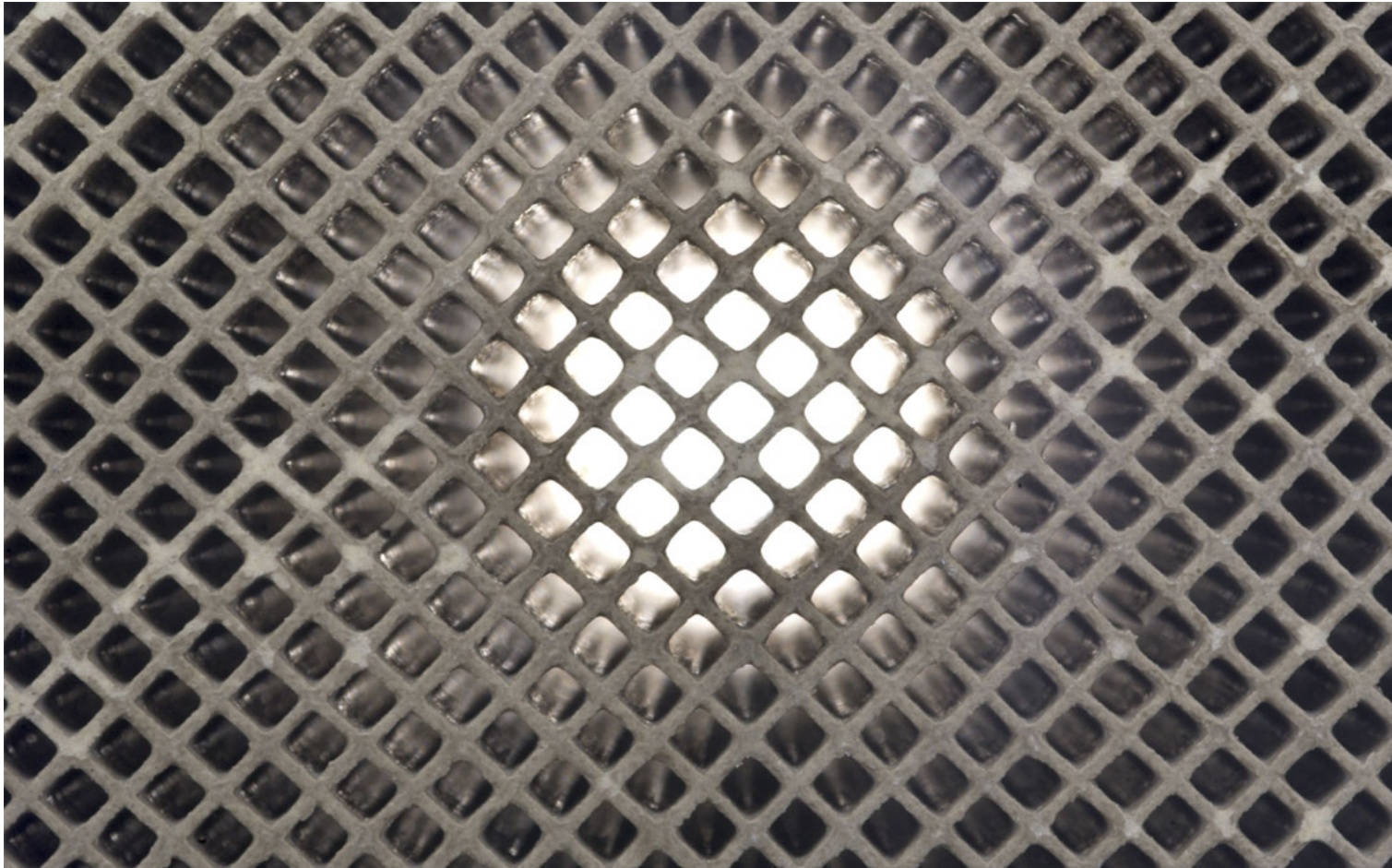


Diesel Oxidation Catalyst (DOC) at Work





Diesel Oxidation Catalyst





HP Diesel Oxidation Catalyst



Particulate Reactor™



Wire mesh substrate



PARTICULATE REACTOR™

The Particulate Reactor™ reduces:*

PM > 50%

CO > 60%

HC 60%

0%

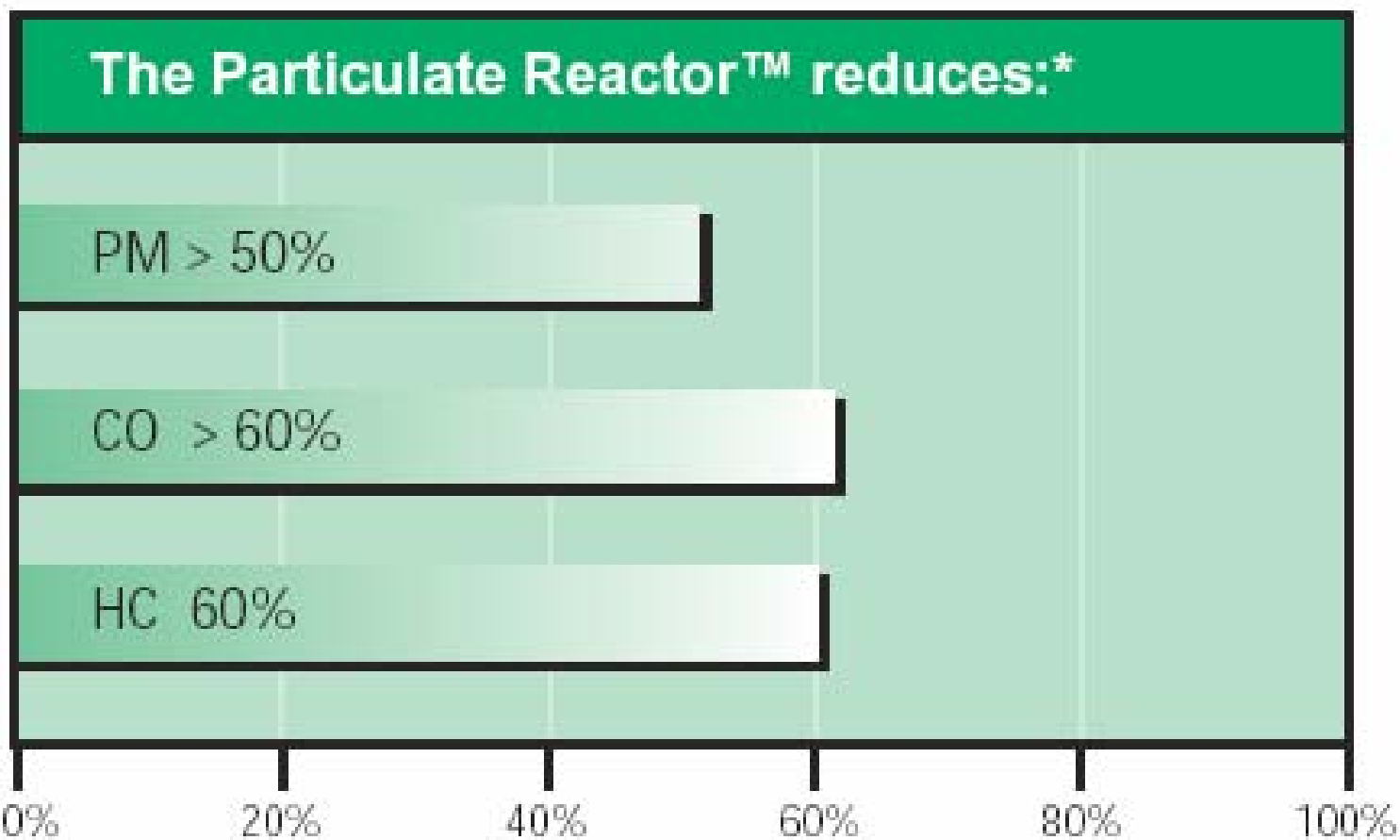
20%

40%

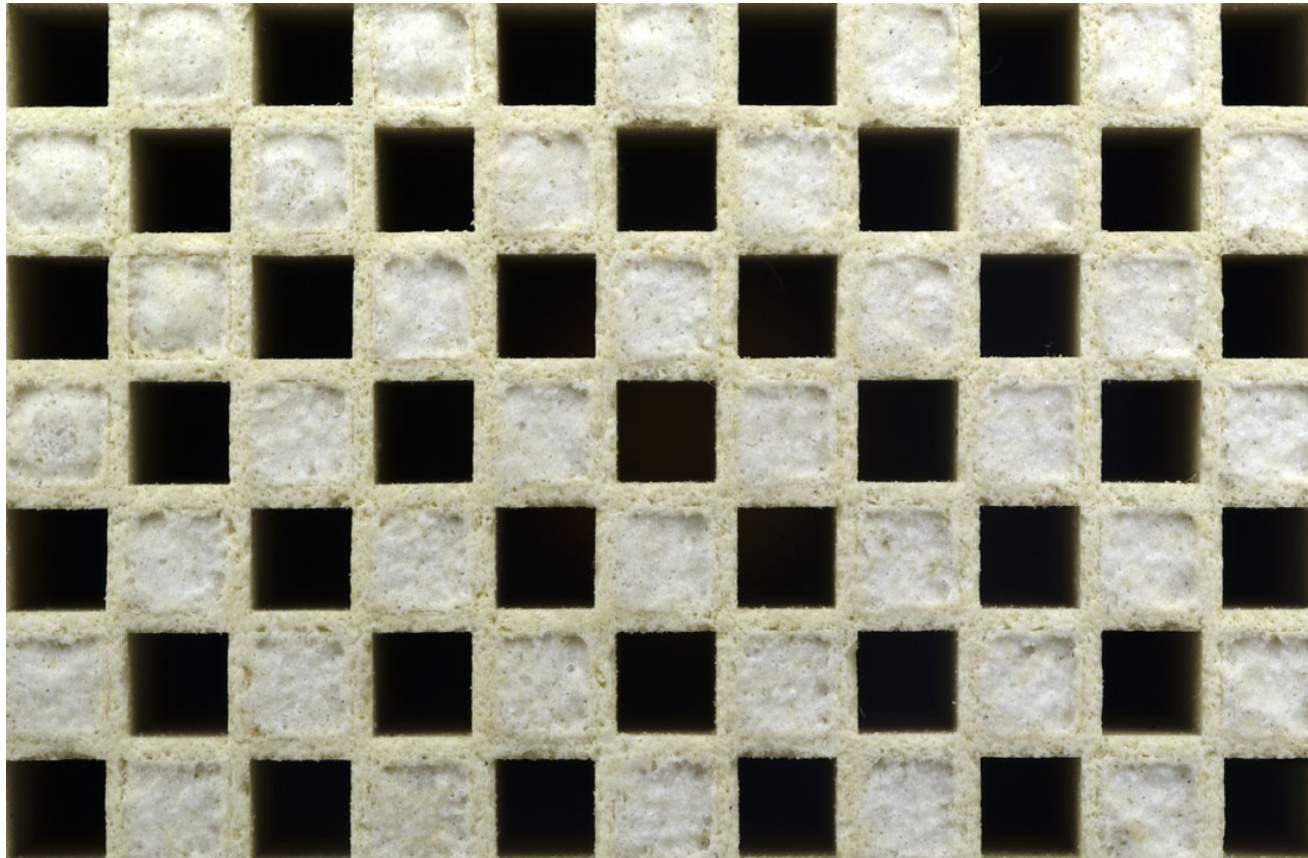
60%

80%

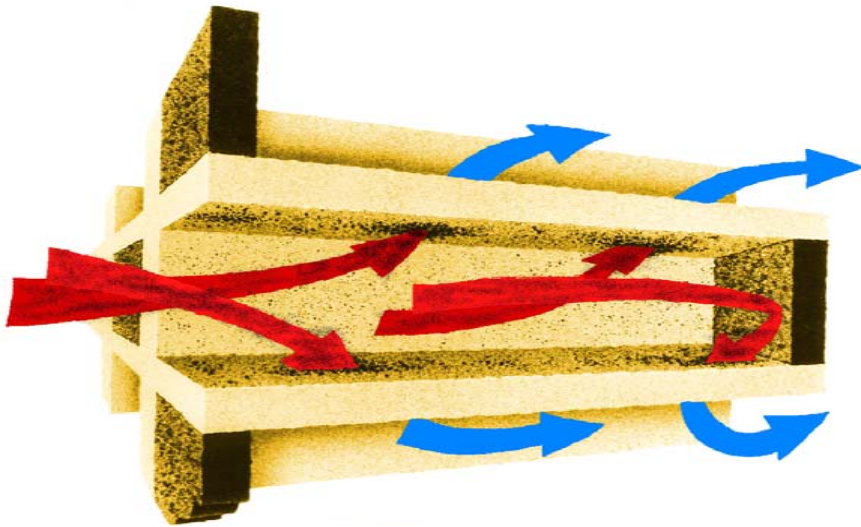
100%



Diesel Particulate Filter



Diesel Particulate Filters for high PM, CO & HC reduction



- Wall Flow Structure
- Reduces HC & CO by 80% to 95%
- Reduces PM by 85%
- Duty cycle dependent
 - >300°C 30%
- Fuel specific
 - <50 ppm Sulfur



**During 500,000 miles of operation,
oil drop will be:**

Wire Mesh
Breather Systems

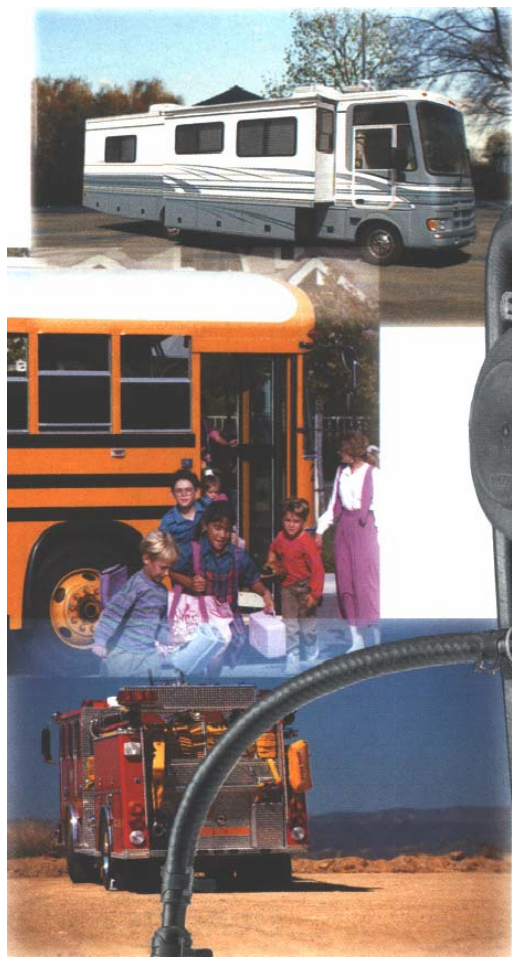


2 Quarts

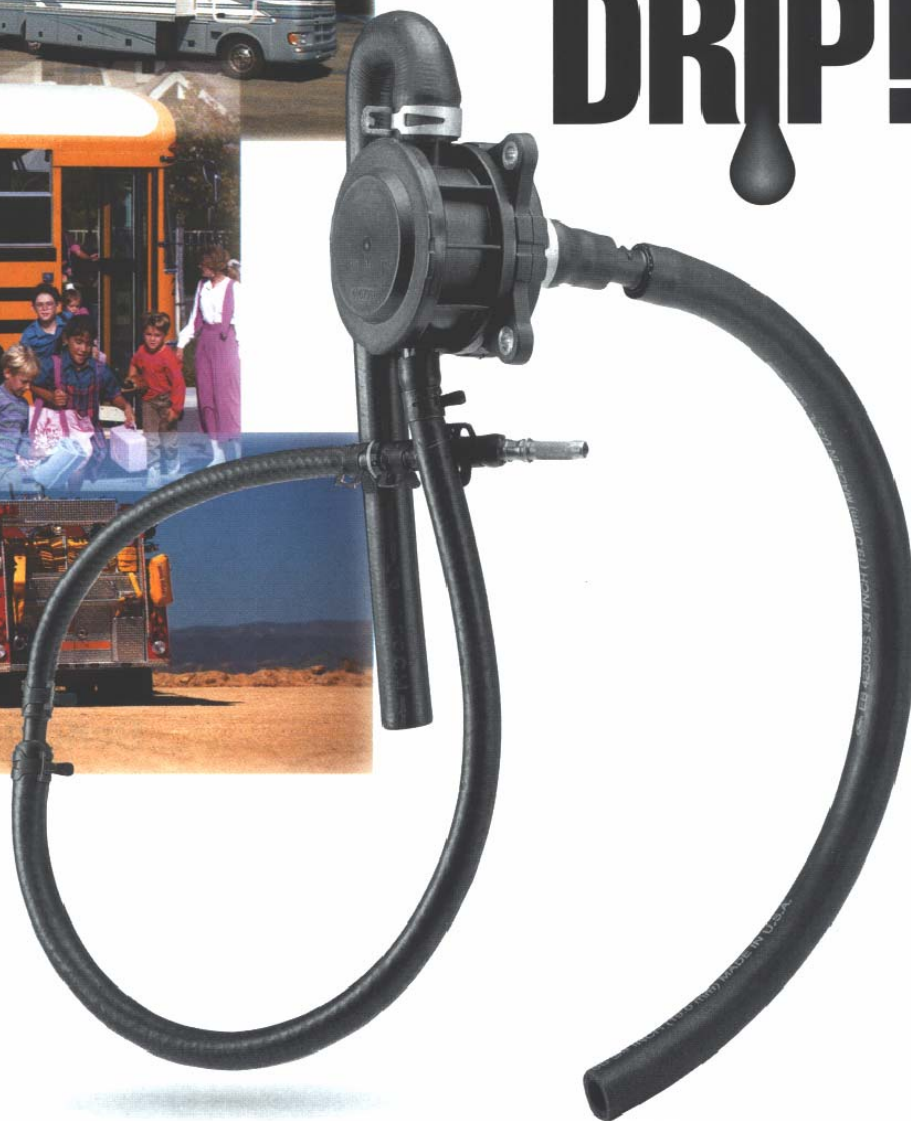
Enviroguard™
OCV System



6 Tablespoons



STOP THE
DRIP!



1100

